

## Manganese in Drinking Water Guidance Sheet for Public Water System Users

### What is manganese?

Manganese is a common mineral found in rocks, soil, groundwater, and some surface water in Vermont. It is a naturally-occurring component of most foods and is a trace mineral in our diets. Manganese is an essential metal required for many metabolic and cellular functions.

### What is changing about the regulation of manganese in drinking water?

Manganese is regulated as a secondary contaminant due to aesthetic concerns. Manganese equal to or greater than 0.05 mg/L can lead to an unacceptable taste or staining of fixtures. Recent studies have shown potential health effects from consuming too much manganese. Because of these studies, the Vermont Department of Health and the Drinking Water and Groundwater Protection Division (Division) have worked together to establish a Health Advisory for Manganese in drinking water of 0.3 mg/L (or 300 ppb).

### What health effects are associated with manganese?

Low amounts of manganese are essential to good health. Exposure to too much manganese over a long time could harm the nervous system. The Health Advisory for manganese in drinking water is 0.3 mg/L, established by the Vermont Department of Health. Infants and children up to 1 year old should not be given water containing manganese over 0.3 mg/L because they could have greater difficulty processing manganese than older children and adults. Special care should be taken to avoid making infant formula with water with a manganese concentration exceeding 0.3 mg/L. The US EPA has helpful manganese health information available on its website:  
[http://www.epa.gov/safewater/ccl/pdfs/reg\\_determine1/support\\_cc1\\_magnese\\_dwreport.pdf](http://www.epa.gov/safewater/ccl/pdfs/reg_determine1/support_cc1_magnese_dwreport.pdf)

### What does this Health Advisory mean for me?

For most people served by public drinking water systems in Vermont, likely nothing. While manganese is naturally occurring in groundwater and some surface water in Vermont, the Division expects only a small number of public drinking water systems to be affected by this Health Advisory. More will be known upon completion of the sampling in 2015. If your drinking water is shown to contain at or above 0.3 mg/L of manganese, you will receive public notice from the water supply system.

### Should I be concerned if I am pregnant or breastfeeding my child if the manganese levels are above 0.3 mg/L?

There is no correlation between manganese levels in water and manganese levels in breast milk. However, water with manganese above 0.3 mg/L should not be given to infants or children up to 1 year old to drink, or be used to mix with formula.

### Can I cook with water with manganese above 0.3 mg/L?

It is recommended that you use a water source with manganese levels below 0.3 mg/L for cooking foods that absorb considerable water when cooking, such as rice, oatmeal, or pasta or soups requiring added water.

### Should I boil my water?

No; unless directed by your water system in response to a bacteriological contamination event. Boiling will concentrate the manganese levels because the water that evaporates leaves the manganese behind.

Can I brush my teeth with water with manganese above 0.3 mg/L?

Yes. It is unlikely that enough water can be consumed through teeth brushing to be of concern.

Can I shower and clean myself with water with manganese above 0.3 mg/L?

Yes. Manganese is poorly absorbed through the skin.

Can I wash dishes with water with manganese above 0.3 mg/L?

Yes.

Who can you contact for more information?

With health-related questions, please contact the Vermont Department of Health Environmental Health Division at 800-439-8550.

There are several contacts within the Drinking Water and Groundwater Protection Division that can provide assistance or answer questions related to manganese:

Billy Kahn – Compliance Analyst: 802-585-4898 or [billy.kahn@state.vt.us](mailto:billy.kahn@state.vt.us).

Julie Hackbarth – Compliance and Certification Manager: 802-585-4897 or [julie.hackbarth@state.vt.us](mailto:julie.hackbarth@state.vt.us).

Ben Montross – Compliance and Support Services Section Chief: 802-498-8981 or [ben.montross@state.vt.us](mailto:ben.montross@state.vt.us).

This guidance sheet and related environmental information are available electronically via the internet. For information visit us through the Vermont Homepage at <http://www.vermont.gov> or visit VT DWGWP directly at <http://www.drinkingwater.vt.gov>

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